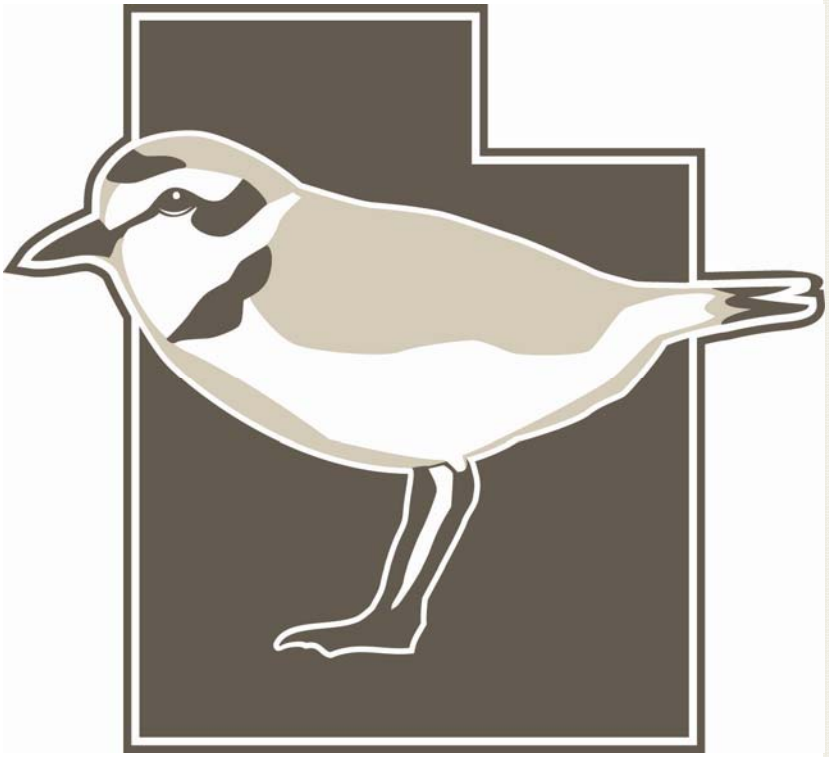
2008

Snowy Plover Survey – Great Salt Lake, UT

Summary Report



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9/21/2008

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Introduction

The expansive mudflats and playas of the Great Salt Lake (GSL) shoreline represents critical breeding habitat for the Snowy Plover (*Charadrius alexandrinus*; SNPL). Throughout much of its range, SNPL populations have been declining (Page et al. 1991). The USFWS in collaboration with USGS and other shorebird scientists formed a study-design team to develop methodologies for a survey of SNPL at GSL and to establish a long-term monitoring program to track population trends. The first year of the survey at GSL was conducted in 2007. This report describes the results obtained for the second and final year of the survey.

Methods

The Great Salt Lake encompasses more than 6,000 sq km, thus a complete census of the entire GSL was not possible. Local area experts assisted in developing a sampling frame by identifying GSL shoreline habitat with – 1) known breeding SNPL, 2) having the potential to support breeding plovers, or 3) unlikely to support SNPL. Utilizing GIS, survey locations where randomly selected from within shoreline categorized as either known breeding or potential breeding habitat. These two strata were overlaid with a grid of 100-ha clusters of 25 4-ha (200 x 200 m) cells, which yielded 3,212 sample clusters. A random sample of these clusters was drawn from each stratum across the entire GSL (Figure 1). Because it was not possible to know the exact lake level before the start of the survey, some clusters fell in areas inaccessible for survey. To compensate for this more units were selected than could be surveyed. In total, 500 clusters were randomly drawn for the 2007 breeding season.

The sampling method consisted of a single survey to determine occupancy of each 4-ha cell within the 100-ha cluster. Data collected will be used to calculate a SNPL breeding population estimate for GSL. This estimate will be pooled with estimates collected at other sites to generate a range-wide population size for this species.

Training- Training of all surveyors occurred during one of one training session on May 2, 2008 at the Bear River Migratory Bird Refuge. Participants were instructed on the protocol, the use of GPS units, species identification, and allowed an opportunity to practice estimating distances of 75m and 150m.

Timing- The survey period for Great Salt Lake began on 7 May and continued through 7 June.

Results

A total of 381 clusters (76.2% of the randomly drawn clusters) were visited and sampled over the course of the survey period by 33 different observers.

On May 5 a plane was chartered to fly the entire shoreline of the GSL in order to identify shoreline clusters that were – 1) under water and thus not suitable to survey or 2) located in potential SNPL habitat. This saved a considerable amount of time for surveyors and allowed us to maximize the number of clusters that could be sampled.

Of the 9525 cells visited, data were collected from 4643 cells. This left 4882 cells where observers could not initiate a count. Reasons for not surveying included, the cell was underwater (3086 cells), the cell was covered in dense vegetation (1669 cells) or the cell was located in upland habitat (165 cells). Consequently surveyors were able to count 834 SNPL from 4643 cells that were suitable for survey.

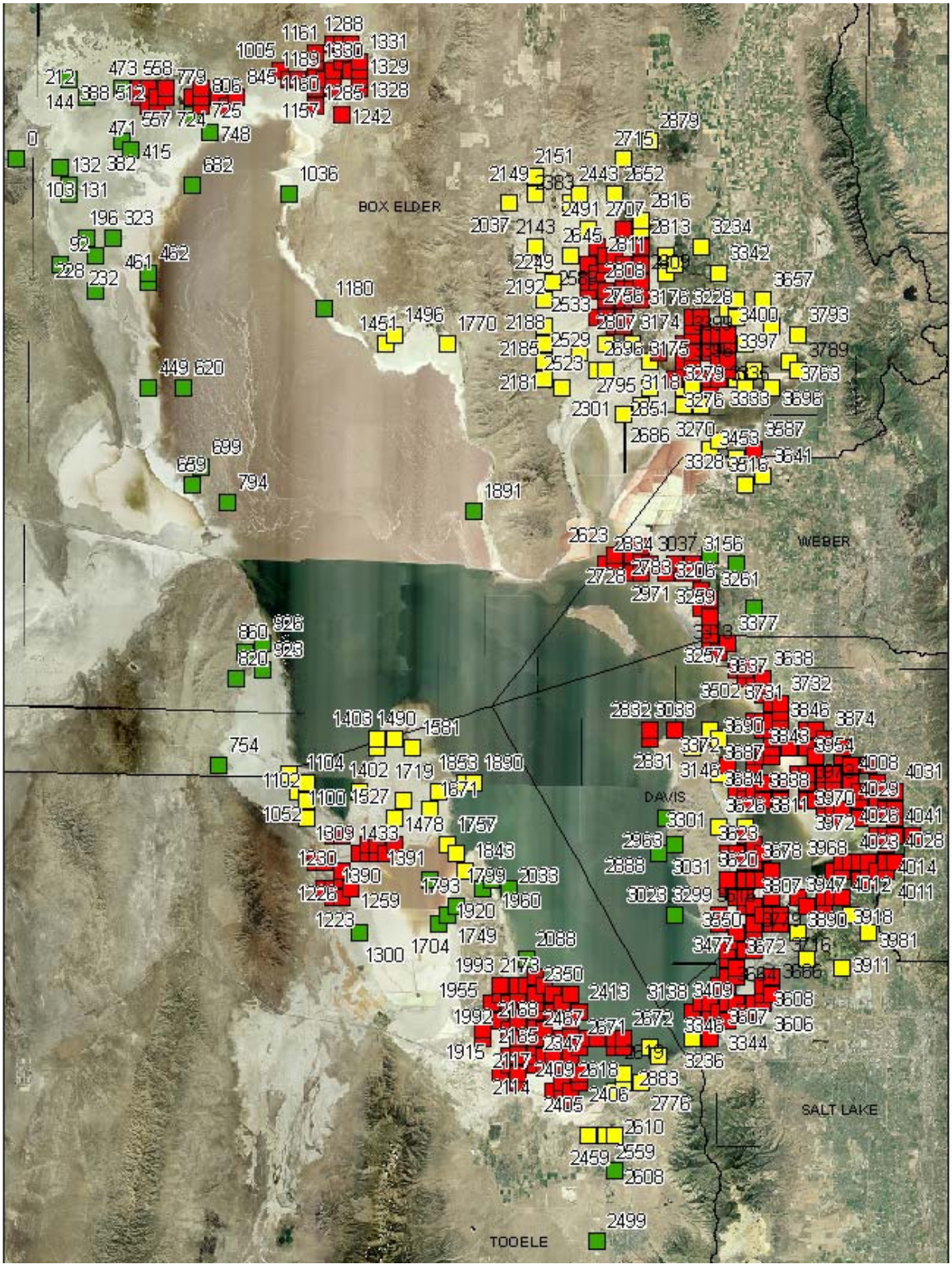

Figure 1. Location of survey clusters at Great Salt Lake (Red = sites with known breeding SNPL, Yellow= sites having the potential to support SNPL, and Green = sites unlikely to support SNPL).

LITERATURE CITED

Page et al. 1991. Distribution and abundance of the Snowy Plover on its western North American breeding grounds. Journal of Field Ornithology 62:245-255.